CLAIMS

What is claimed is:

1.   A method, comprising:

(1) warping a first level image of the first image pyramid with a motion field;

(2) determining a residual motion field from the warped first level image of the first image pyramid and a corresponding first level image of the second image pyramid;

(3) if the residual motion field is not less than a threshold, adding the residual motion field to the motion field and repeating steps (1) and (2); and

(4) if the residual motion field is less than the threshold:

(a) warping a second level image of the first image pyramid with the motion field;

(b) determining a second residual motion field from the warped second level image of the first image pyramid and a corresponding second level image of the second image pyramid; and

(c) if the second residual motion field is not less than a threshold, adding the second residual motion to the motion field and repeating steps (4)(a) and (4)(b).

2.   The method of claim 1, prior to step (1), further comprising:

generating the first image pyramid of the first image; and

generating the second image pyramid of the second image.

3.   The method of claim 1, prior to step (1), further comprising determining the motion field from the first level image of the first image pyramid and the corresponding first level image of the second image pyramid.

4.   The method of claim 1, wherein said generating a first image pyramid and said generating a second image pyramid comprises generating a first Laplacian pyramid of the first image and generating a second Laplacian pyramid of the second image.

5.   The method of claim 2, wherein said determining a motion field and said determining a residual motion field comprises applying a Horn and Schunck motion estimation algorithm.

6.   The method of claim 1, further comprising:

>   (4)(d) if the second residual motion field is less than the threshold, generating an intermediate image between the first and the second image from the motion field.

7.   The method of claim 6, wherein said generating an intermediate image comprises:

>   determining a pair of corresponding points in the first and the second image from a motion vector in the motion field;
>
>   determining a value of a corresponding point in the intermediate image from the values of the pair of corresponding points;
>
>   determining a position of the corresponding point in the intermediate image from the motion vector; and
>
>   repeating said determining a pair of corresponding points, said determining a value of a corresponding point, and said determining a position of the corresponding point for remainder of motion vectors in the motion field.

8.   A method, comprising:

>   (1) generating a first image pyramid of a first image;
>
>   (2) generating a second image pyramid of a second image;
>
>   (3) determining a motion field from a first level image of the first image pyramid and a corresponding first level image of the second image pyramid.

(4) warping the first level image of the first image pyramid with the motion field;

(5) determining a first residual motion field from the warped first level image of the first image pyramid and the corresponding first level image of the second image pyramid;

(6) if the first residual motion field is not less than a threshold, adding the residual motion field to the motion field and repeating steps (4) and (5);

(7) if the first residual motion field is less than a threshold:

>(a) warping a second level image of the first image pyramid with the motion field;

>(b) determining a second residual motion field from the warped second level image of the first image pyramid and a corresponding second level image of the second image pyramid; and

>(c) if the second residual motion field is not less than a threshold, adding the second residual motion to the motion field and repeating steps (7)(a) and (7)(b).